

### REMARKS

This Amendment responds to the Office Action dated March 9, 2007 in which the Examiner rejected claims 1-4, 6-11, 13-14, 16-18 and 20 under 35 U.S.C. § 102(b) and rejected claims 16-19 under 35 U.S.C. §103.

Applicants respectfully thank the Examiner for the personal interview on May 15, 2007.

As indicated above, claims 1, 6 and 20 have been amended in order to make explicit what it is implicit in the claims. The amendment is unrelated to a statutory requirement for patentability.

Claim 1 recites fuel cell arrangement comprising several individual components arranged in a stack. The individual components comprise at least a first electrode, the first electrode being comprised of first and second stacked plates having contacting surfaces and oppositely facing surfaces. The first and second stacked plates directly contact one other and are at least partially joined to one another by a common seal element of polymer material which is injected onto the first and second plates to form a module. Each of the first and second plates is provided with an opening and the seal element extends through the opening in each of the first and second plates. Each catalyst plate directly contacts one oppositely facing surface of one of the first and second plates.

Through the structure of the claimed invention having each catalyst plate directly contacting one oppositely facing surface of one of the first and second plates, as claimed in claim 1, the claimed invention provides a fuel cell arrangement which reduces the number of individual parts necessary for assembling the fuel cell. The prior art does not show, teach or suggest the invention as claimed in claim 1.

Claim 6 recites a module for a fuel cell arrangement comprising at least a first electrode. The first electrode is comprised of first and second stacked plates having contacting surfaces and oppositely facing surfaces and forming a stack. The first and second stacked plates directly contact each other. A common seal element of polymer material is injected onto the first and second stacked plates and by which the first and second stacked plates are at least partially joined to one another. Each of the first and second stacked plates forming the stack is provided with an opening and the common seal element extends through the opening in each of the two stacked plates. Each catalyst plate directly contacts one oppositely facing surface of one of the first and second plates.

Through the structure of the claimed invention having each catalyst plate directly contacting one oppositely facing surface of one of the first and second plates, as claimed in claim 6, the claimed invention provides a reduced number of individual parts necessary for assembling a fuel cell. The prior art does not show, teach or suggest the invention as claimed in claim 6.

Claim 20 recites process for producing a module for a fuel cell arrangement, comprising inserting at least portions of first and second plates having contacting surfaces and oppositely facing surfaces into a casting mold, each of the first and second plates being provided with an opening; filling the casting mold with a polymer seal material so that the seal material adjoins the first and second plates and extends through the opening in each of the first and second plates to form a module for a fuel cell in which the first and second plates directly contact one another and together form a single electrode of the module for the fuel cell arrangement; and directly contacting one oppositely facing surface with a respective catalyst plate.

Through the method of the claimed invention directly contacting one oppositely facing surface with a respective catalyst plate, as claimed in claim 20, the claimed invention provides a method of assembling a fuel cell arrangement with reduced number of individual parts. The prior art does not show, teach or suggest the invention as claimed in claim 20.

Claims 1-4, 6-11, 13-14, 16-18 and 20 were rejected under 35 U.S.C. §102(b) as being anticipated by *Kuroki* (JP 2001-338673).

*Kuroki* appears to disclose mutually stacked separators 1 and 2. A reaction polar zone 3 is provided between the separators 1 and 2. The reactive polar zone 3 includes a positive electrode 5, a negative electrode 6 and an electrolyte membrane 4. A gasket 7 made from rubber-like elasticity material is arranged at the peripheral side of the reaction zone 3. A separator seal 14 is formed in through holes 16, 18 of the separator plates 1 and 2.

Thus, *Kuroki* merely discloses positive electrode 5, electrolyte membrane 4 and negative electrode 6 formed between separator plates 1 and 2. Nothing in *Kuroki* shows, teaches or suggests first and second stacked plates directly contact one another and each catalyst plate directly contacting one oppositely facing surfaces of one of the first and second plates as claimed in claims 1, 6 and 20. Rather, *Kuroki* teaches away from the claimed invention since the positive electrode 5, electrolyte member 4 and negative electrode 6 are formed between contacting surfaces.

Since nothing in *Kuroki* shows, teaches or suggests each catalyst plate directly contacting one oppositely facing surface of one of the first and second

plates as claimed in claims 1, 6 and 20, Applicants respectfully request the Examiner withdraws the rejection to claims 1, 6 and 20 under 35 U.S.C. §102(b).

Claims 2-4, 7-11, 13-14 and 16-18 recite additional features. Applicants respectfully submit that claims 2-4, 7-11, 13-14 and 16-18 would not have been anticipated by *Kuroki* within the meaning of 35 U.S.C. §102(b) at least for the reasons as set forth above. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 2-4, 7-11, 13-14 and 16-18 under 35 U.S.C. §102(b).

Claims 1 and 6 were rejected under 35 U.S.C. §103 as being anticipated by *Schilling et al.* (U.S. Patent No. 6,338,492).

*Schilling et al.* appears to disclose in FIG. 1 a section through a rim zone of a fuel cell, details concerning the construction of the fuel cell having been omitted. Individual cell 1 is made essentially of bipolar plates 2 and 3 and the interposed MEA (membrane electrode assembly) 4. Bipolar plates 2 and 3 are provided with channels 8 for gases and liquids. Sealing elements 10 are inserted into grooves 9 of bipolar plates 2 and 3. In the exemplary embodiment shown, bipolar plates 2 and 3 are made of graphite. Grooves 9 are formed during the production of graphite plates 2 and 3. Sealing elements 10 are injected. Using an appropriate tool, the injection process is carried out in such a way that free gaps 13 are present between side walls 11 of sealing elements 10 and adjacent lateral groove walls 12. These gaps 13 are dimensioned in such a way that when seal 10 is compressed during the assembly, the gaps do not prevent the seal from expanding transversely, as shown in FIG. 2, so that the groove is not completely filled up even after repeated expansion of the seal in operation. Due to this measure, sealing elements 10, made

of elastomeric material, retain their spring action. (Column 3, lines 39-58). Another possibility for anchoring sealing elements 10 is shown in FIGS. 4A and 4B. There, as already described above, sealing elements 10 are inserted into groove 9 on only one side of bipolar plate 2. Placed on the other side of bipolar plate 2, exactly opposite groove 9, are bore holes 20 which are connected to groove 9 through holes 19. Bore holes 20 have a larger diameter than holes 19, so that during the manufacturing process, when sealing element 10 is injected into the groove, stoppers 21 which reliably retain sealing element 10 on bipolar plate 2 are formed in bore holes 20. Stoppers 21 do not project beyond plane 22 of bipolar plate 2, so that no disturbing outward curvatures result due to this. (Column 4, lines 23-35).

Thus, *Schilling et al.* merely discloses a single plate having a seal element 10. Nothing in *Schilling et al.* shows, teaches or suggests first and second stacked plates joined to one another by a common seal element as claimed in claims 1 and 6. Rather, *Schilling et al.* teaches away from the claimed invention since the sealing element 10 is inserted into an individual plate.

Furthermore, nothing in *Schilling et al.* shows, teaches or suggests each catalyst plate directly contacting one oppositely facing surface of one of the first and second plates as claimed in claims 1 and 6.

Since nothing in *Schilling et al.* shows, teaches or suggests a) a common seal element joining first and second stacked plates and b) each catalyst plate directly contacting one oppositely facing surface of one of the first and second plates as claimed in claims 1 and 6, Applicants respectfully request the Examiner withdraws the rejection to claims 1 and 6 under 35 U.S.C. §103.

Claims 16-19 were rejected under 35 U.S.C. §103 as being unpatentable over *Kuroki* or *Schilling et al.* and further in view of *Barton et al.* (WO 99/04446).

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103. The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, Applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

As discussed above, since nothing in *Kuroki* or *Schilling et al.* show, teach or suggest the primary features as claimed in claim 6, Applicants respectfully submit that the combination of the primary reference(s) with the secondary reference to *Barton et al.* will not overcome the deficiencies of the primary reference(s). Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 16-19 under 35 U.S.C. §103.

The prior art of record, which is not relied upon, is acknowledged. The references taken singularly or in combination do not anticipate or make obvious the claimed invention.

Thus it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is requested to contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, Applicants respectfully petition for an appropriate extension of time.

The fees for such extension of time may be charged to Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INCERSOLL & ROONEY PC

A handwritten signature in black ink, appearing to read 'Ellen', written over a horizontal line.

Date: May 31, 2007

By:

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